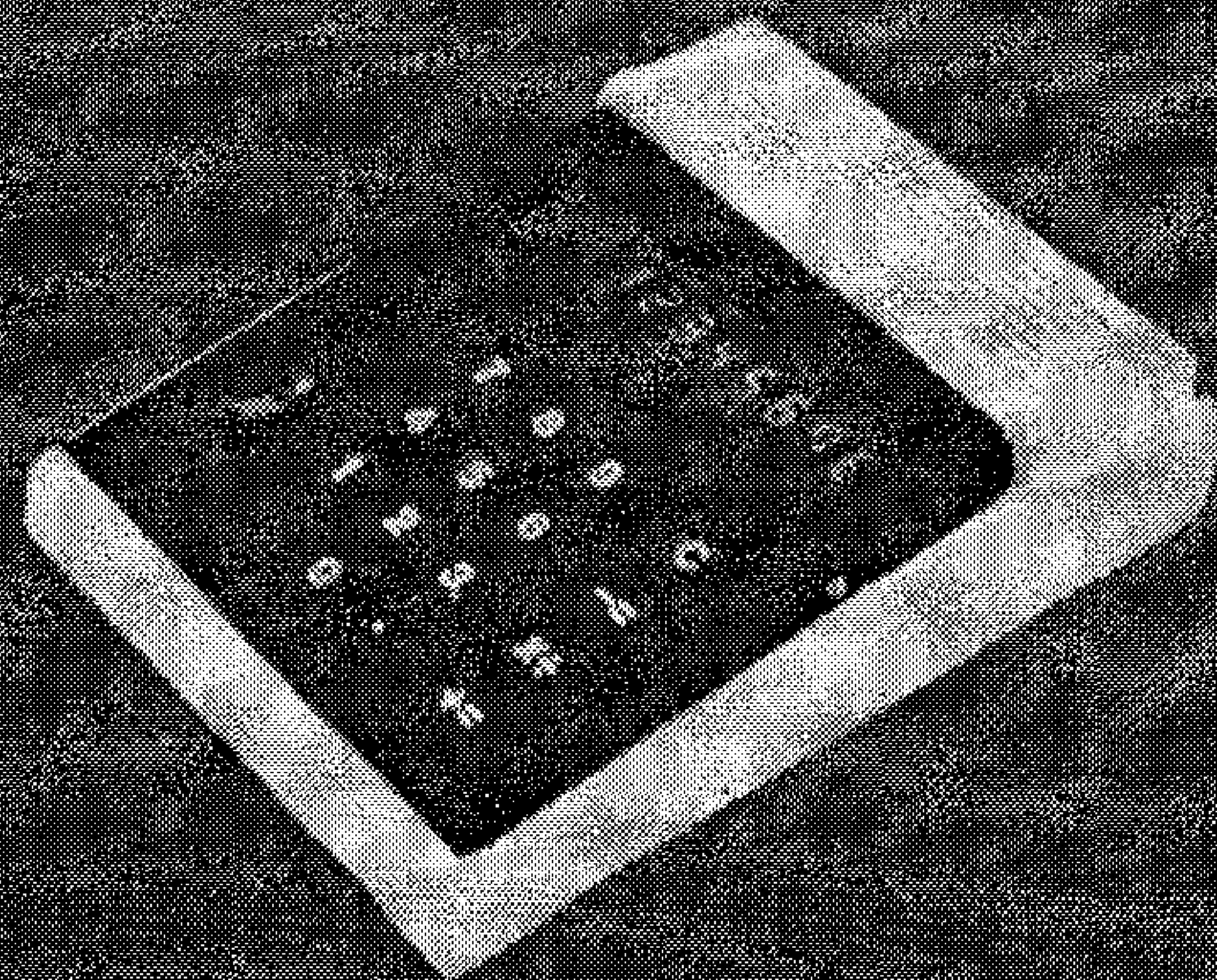


ELECTRONIC CALCULATOR

# Escort-8

OPERATING INSTRUCTION



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## FEATURES

**1. Ultra-compact. So small it can be operated in the palm of your hand**

ESCORT miniaturization considerably reduces overall dimensions and weight; increases dependability and lowers operating costs.

**2. Simple operation even children can operate it !**

Only four function keys. No special training is required. Simply touch the keys and the answer to almost any practical mathematical problem appears instantly.

**3. Underflow system for higher calculating efficiency**

Simplifies long answers. For example, 8 digits x 8 digits = 16 digits can be carried out despite the 8 digit display panel. Counting from the left the first 8 digits of the answer are displayed and the rest discarded.

**4. Call back system for decimal point recovery**

If the integral number of the result exceeds 8 digits, the decimal point functions even though it doesn't appear on the display panel.

**5. Soft lighting green display**

Our specially developed non-glare green display panel eliminates eye-strain, improves reading ease.

**6. Minus sign indicator**

Automatically turns on when the result is negative.

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## 7. Overflow error checking system that can detects miscalculation

When the integral number of the result exceeds 16 digits in multiplication and division, the indication becomes zero and the error lamp, "E", turns on and the calculation stops. If calculations are performed continuously when the decimal point is not displayed in addition and subtraction, the indication becomes the same as above state. In this case, all keys except C key are locked electronically and can not be performed calculations. Accordingly, reset an overflow error by touching C key.

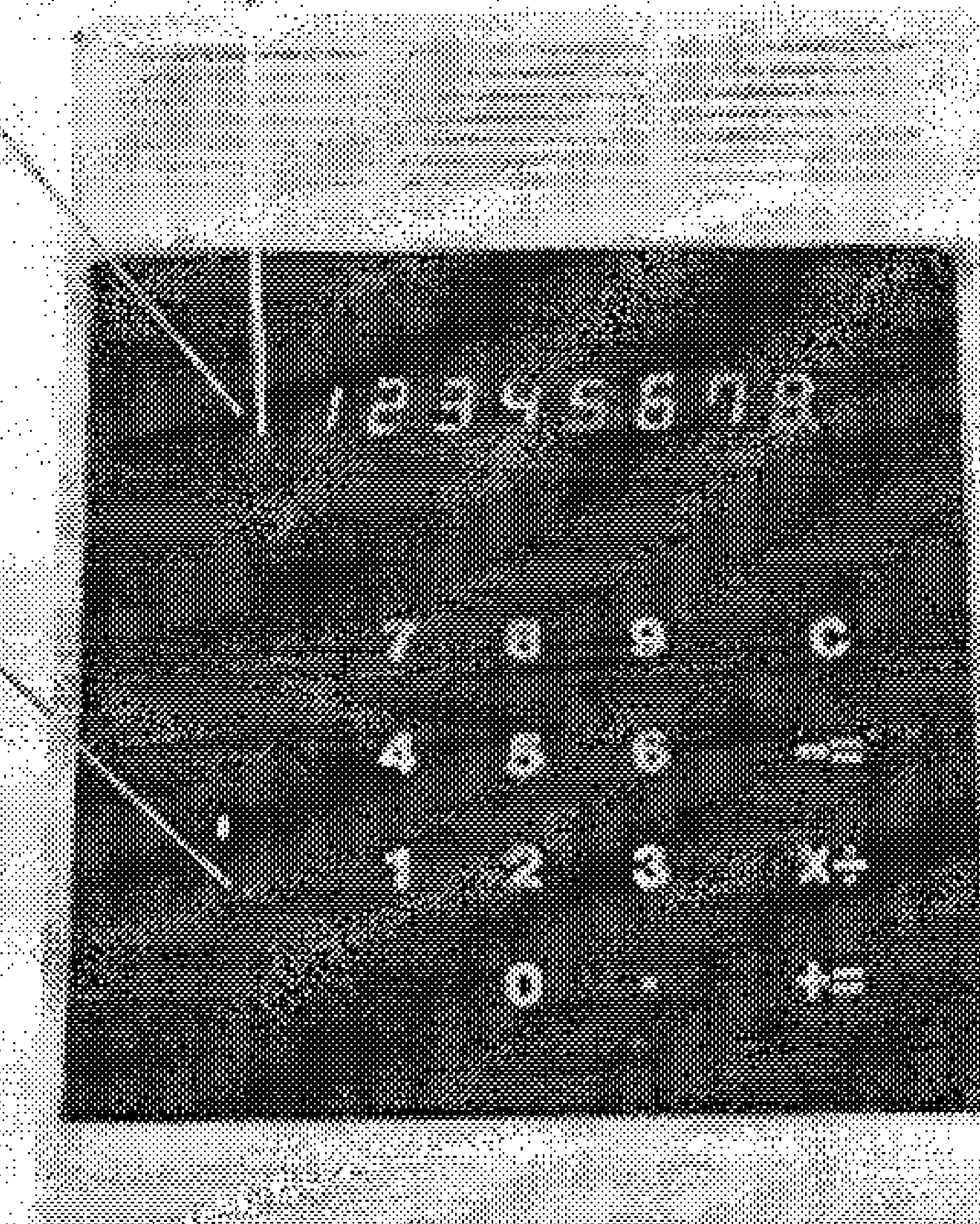
## EVERY PART DESIGNATION

### ■ MINUS SIGN INDICATOR

### ■ ERROR INDICATOR

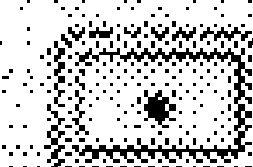
Turns on when the integral number of the result exceeds 16 digits in multiplication and division or when the addition or subtraction is performed continuously when the decimal point is not displayed.

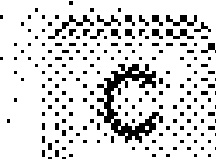
### ■ POWER SWITCH






## KEY IDENTIFICATION

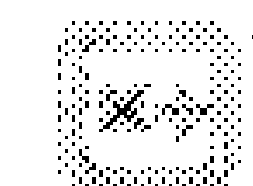
 Numeral keys. Used for entering numbers.

 Determines the decimal point position.

 Clears the calculator and corrects mistaken entry. (See Ex. 6.)

 When  key is set, multiplication is carried out. When  key is not set, addition is carried out.

 When  key is set, division is carried out. When  key is not set, subtraction is carried out. Also has a sign-change function.

 Used when carrying out multiplication and division.

## SPECIFICATIONS

Power source:	AC 115/230V, 50/60Hz
Capacity:	8 digits
Addition & subtraction:	8 digits $\pm$ 8 digits = 8 digits
Multiplication:	8 digits $\times$ 8 digits = 8 digits Product: up to 8 digits; in case that a product exceeds 8 digits, lower digits are discarded, but the decimal point is kept in a register and called back by decimal point call back system.
Division:	8 digits $\div$ 8 digits = 8 digits
Decimal point:	Complete floating decimal point with call back system.
Negative:	Minus sign indication
Calculation speed:	200 milliseconds (max)
LSI:	4
MOS-IC:	3
Diodes:	19
Display tube:	Mini fluorescence display tube
Clock pulse:	50kHz
Temperature:	0°C–40°C (32°F–104°F)
Power consumption:	AC5W
Dimensions:	56.5mm(H) $\times$ 145(W) $\times$ 200(D)
Weight:	880g

## HINTS

1. As Escort uses highly sensitive LSIs, and electronic components, avoid placing the unit in hot, dusty or humid locations, or on surfaces, subject to excessive vibration.
2. Do not jolt or drop the unit.
3. When cleaning the cabinet, do not use wet cloth or any organic solutions such as kerosene or benzine.
4. Be sure to switch off after using and disconnect the power cord surely.

## BEFORE OPERATION

When the power is turned on, press the [C] key twice to clear the machine.

Example	power on	7567.0987 (appears at random.)
	press [C] key	
	(first time)	.0225 (appears at random.)
	press [C] key	
	(second time)	00000000



## OPERATION

Connect power cord to an electric outlet, and turn the unit on. Be sure to press **C** key twice before starting calculations.

### 1. ADDITION

Ex. 1-1       $123.1 + 864.2$

Steps	operation	display
1	123.1	123.1
2	$\boxed{+}$	123.1
2	864.2	864.2
4	$\boxed{=}$	987.3

Ex. 1-2       $2.3 + 2.45 - 2.678$

Steps	operation	display
1	2.3	2.3
2	$\boxed{+}$	2.3
3	2.45	2.45
4	$\boxed{+}$	4.75
5	2.678	2.678
6	$\boxed{-}$	7.428

Ex. 1-3      12.345678 + 1234.5678

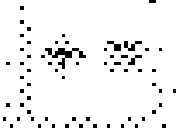

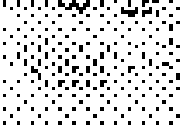
Steps	operation	display	note
1	12.345678	12.345678	
2	$\boxed{+}$	12.345678	
3	1234.5678	1234.5678	
4	$\boxed{+}$	1246 9134 $\boxed{78}$	invisible part

NOTE: Underflow system

In this calculation, the decimal point is aligned to that of addend and the lowest two digits of the answer which exceeds 8 digits, "78," are discarded.

## 2. SUBTRACTION

Ex. 2-1      358.8 - 1241.6 - 27.5




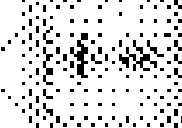
Steps	operation	display
1	358.8	358.8
2		358.8
3	1241.6	1241.6
4		-882.8
5	27.5	-27.5
6		-910.3

### 3. MULTIPLICATION

Ex. 3-1      $2.2 \times 3.3 \times 4.4 \times 5.5$


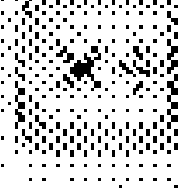

Steps	operation	display
1	2.2	2.2
2	$\times$	2.2
3	3.3	3.3
4	$=$	7.26
5	$\times$	7.26
6	4.4	4.4
7	$=$	31.944
8	$\times$	31.944
9	5.5	5.5
10	$=$	175.6320

Ex. 3-2      824005.1 × 930047.2

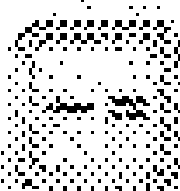
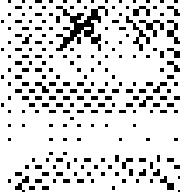
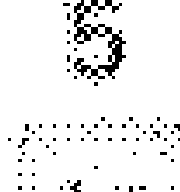
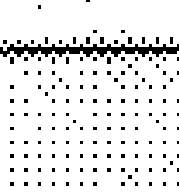
Steps	operation	display	note
1	824005.1	824005.1	
2		824005.1	
3	930047.2	930047.2	
4		76636363 6040.72	invisible part
5		76636363 6040.72	decimal point call back
6	0.0000001	0.0000001	
7		76636.363 0000.	correct number of digit (12)

- NOTE: 1) When the result of calculation exceeds 8 digits, only the upper 8 digits are displayed.  
(step 4)
- 2) In the above case, the decimal point call back system indicates the number of digits in answer.
- 3) In the above example, by multiplying 76636363 by 0.0000001 (step 6), the decimal point is called back as 76636.363 (step 7). This indicates that the decimal point is at the fourth digit from the last figure (step 4).
- 4) Thus, by this operation, the correct integral number of product are known in the above example . . . . . 12 digits.

Ex. 3-3  $(-4) \times 5$

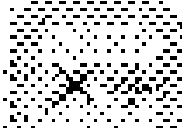
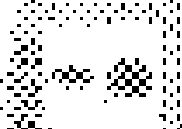

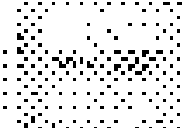
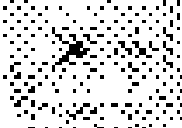

Steps	operation	display	note
1			minus sign indicator on
2	4	- 4	
3		- 4	
4	5	- 5	
5		- 20.	

Ex. 3-4  $(-4) \times (-5)$




Steps	operation	display	note
1			minus sign indicator on
2	4	- 4.	
3		- 4.	
4		4.	minus sign indicator off
5	5	5	
6		20.	

#### 4. DIVISION

Ex. 4—1       $256 \div 12 \div 0.56 \div 2.3$

Steps	operation	display	note
1	256	256	
2		256	
3	12	12	
4		21.333333	The 7th decimal place is discarded
5		21.333333	
6	.56	.56	
7		38.095237	The 7th decimal place is discarded
8		38.095237	
9	2.3	2.3	
10		16.563146	The 7th decimal place is discarded


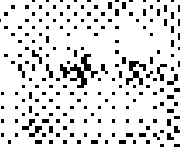

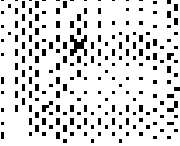
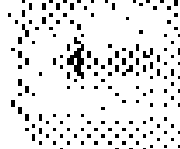
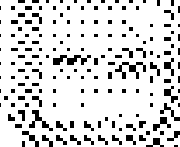


Ex. 4-2      (-264) : 12

Steps	operation	display	note
1		—	minus sign indicator on
2	264	— 264	
3		— 264	
4	12	— 12	
5		— 22.000000	



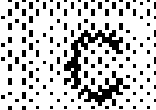
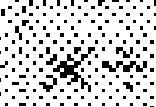

## 5. MIXED CALCULATIONS



Ex. 5 
$$\frac{(5 + 12) \times 0.2 + 48 - 16}{4}$$

Steps	operation	display
1	5	5.
2		5.
3	12	12.
4		17.
5		17.
6	.2	0.2
7		3.4
8	48	48.
9		51.4
10	16	16.
11		35.4
12		35.4
13	4	4.
14		8.85000000

## 6. CORRECTING MISTAKES

Ex. 6       $3 \times 5$  (mistake)       $4$  (correct)

Steps	operation	display	note
1	3	3.	
2		3	
3	5	5	(mistake)
4		3.	
5		3.	
6	4	4.	(correct)
7		12.	



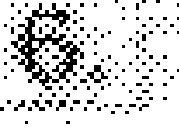
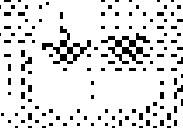
NOTE: In the above case, when "5" is entered by error (step 3), clears mistaken entry (5) and the function key () by touching  key for once. Then touch the same function key again (step 5) and enter correct numeral "4" (step 6)

## 7. OVERFLOW ERROR

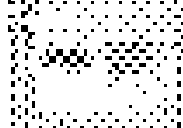



In the following cases, all keys except **C** key are locked electronically and can not be performed calculations. Accordingly, reset an overflow error by touching **C** key.

### 1) Addition & Subtraction

Ex. 7-1      23456789 + 98765437 - 24689

Steps	operation	display	note
1	23456789	23456789	
2		23456789	
3	98765437	98765437	
4		12222222 	invisible part
5	24689	24689	
6		E 00000000	ERROR lamp turns on

Ex. 7-2      23456789 - 98765432 - 2345

Steps	operation	display	note
1	23456789	23456789	
2		- 23456789	minus sign indicator on
3	98765432	- 98765442	
4		- 12222222 	invisible part
5	2345	- 2345	
6		E 00000000	ERROR lamp turns on

NOTE: In continuous addition or subtraction

1. If the answer exceeds 8 digits, the last digit is shifted one digit to the right with the decimal point according to the underflow system as shown in step 4 (Ex 7-1 and Ex 7-2)
2. However, if the addition or subtraction is performed continuously when the decimal point is not displayed, ERROR lamp turns on the calculation stops

## 2) Multiplication

Ex 7-3  $642895 \times 56782 \times 425566$

Steps	operation	display	note
1	642895	642895.	
2	$\times$	642895.	
3	56782	56782.	
4	$\rightarrow$	36504863 890.	invisible part
5	$\times$	36504863 890.	
6	425566	425566.	
7	$\rightarrow$	E.00000000	ERROR lamp turns on

### 3) Division

Ex. 7-4      89898989 : 0.0000012 : 0.0000023

Steps	operation	display	note
1	89898989	89898989	
2	$\boxed{\div}$	89898989	
3	0000012	0.0000012	
4	$\boxed{=}$	74915824 166666.	invisible part
5	$\boxed{\div}$	74915824 166666.	
6	0000023	0.0000023	
7	$\boxed{=}$	E 00000000	ERROR lamp turns on





NOTE: As seen in examples 7-7, 7-3, if the integral number exceeds 16 digits, ERROR lamp lights up and the calculation stops.

## 8. APPLICATION

Ex. 8-1 Discount calculation

Price of \$ 300 articles with 12% discount

Calculating formula  $300 - (300 \times 0.12) = 264$  dollars

Steps	operation	display
1	300	300
2		300.
3	12	0.12
4		36.00
5		36.00
6	300	300
7		264.00

### Ex. 8-2 Tax calculation

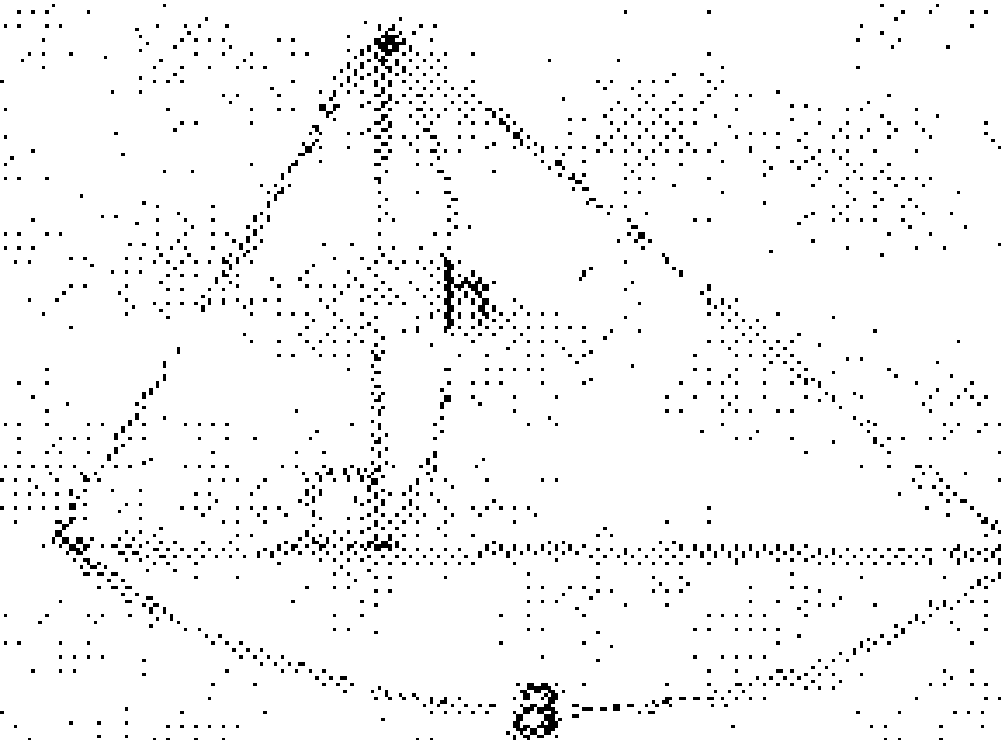
Price of \$ 300 articles with 11% tax included

Calculating formula  $300 + (300 \times 0.11) = 333$

Steps	operation	display
1	300	300
2	$\times$	300
3	.11	0.11
4	$+$	33.00
5	300	300
6	$+$	333.00

Ex. 8-3 Triangle area

$$S = \frac{1}{2} ah \text{ (formula)}$$



$$\begin{cases} a = 12.3\text{m} \\ h = 6.25\text{m} \end{cases}$$

Calculating formula  $S = \frac{12.3 \times 6.25}{2} = 38.4375\text{m}^2$

Steps	operation	display
1	12.3	12.3
2	$\times$	12.3
3	6.25	6.25
4	$=$	76.875
5	$\div$	76.875
6	2	2
7	$=$	38.437500



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